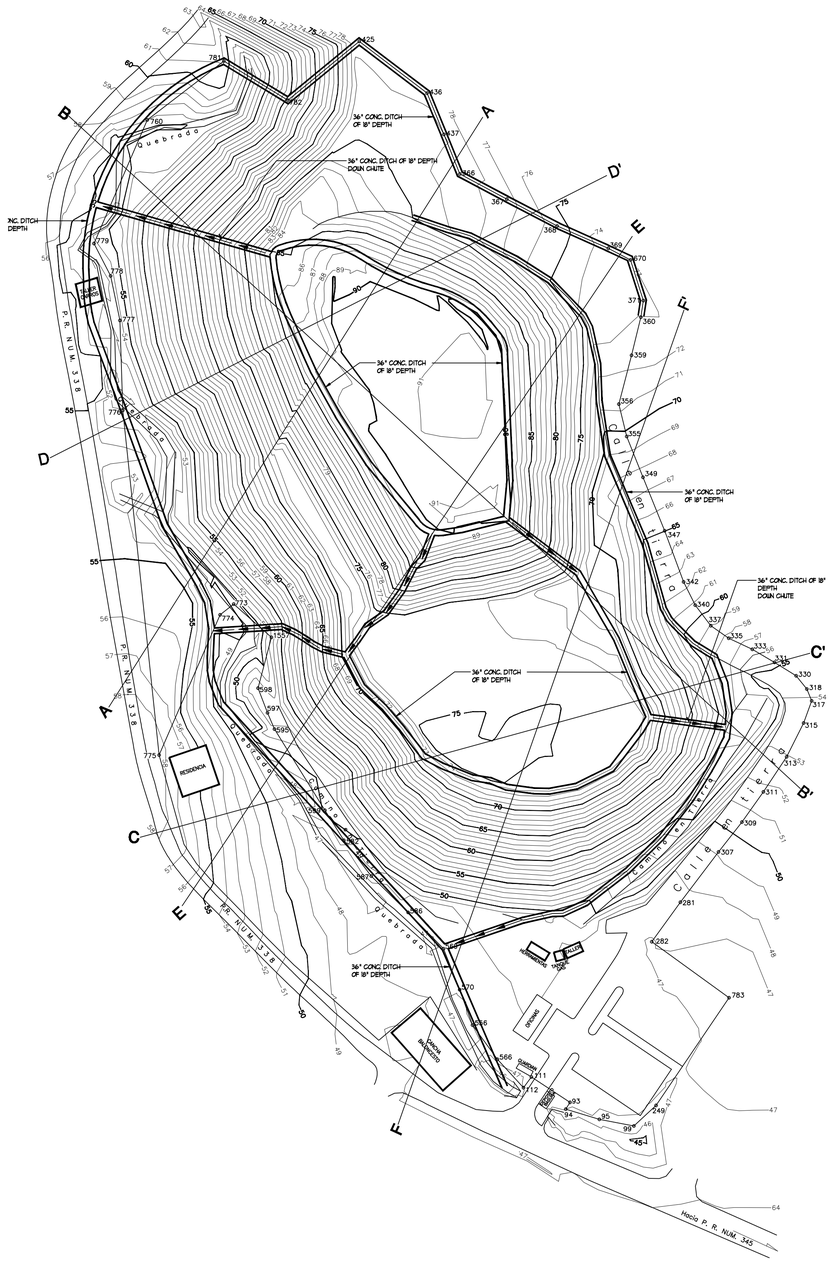
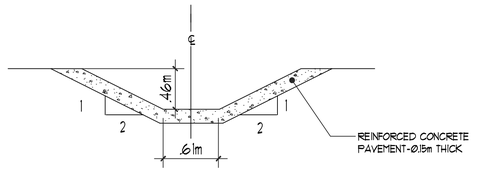


DRAINAGE SITE PLAN

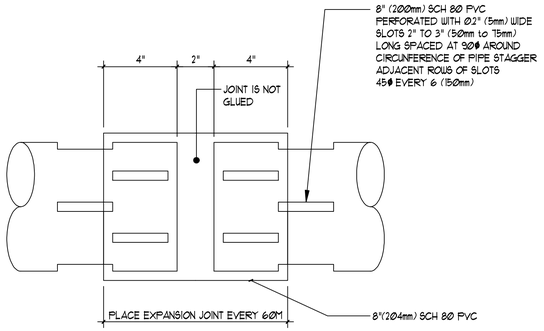
SCALE: XX = 1'-0"



CONCRETE DRAINAGE DITCH STORM LOCATION CONNECTION SYSTEMS

SCALE: XX = 1'-0"

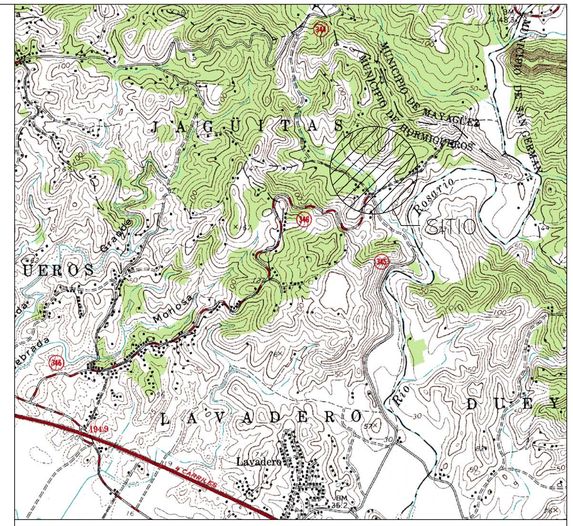
3



NOTE:

1- 160mm CORRUGATED HDPE PIPE MAY BE SUBSTITUTED FOR THE HORIZONTAL PVC VENT PIPE.

2- GLUE 200mm PIPE JOINTS



PLANO DE LOCALIZACION

SCALE: 1:20,000

LEGEND:

CONCRETE CHANNEL

FLOW DIRECTION

ADVANCE COPY

ING. OTTO CALDES LIC. PE4000

MUNICIPALITY OF HORMIGUEROS PUERTO RICO
CLOSURE PLAN FOR THE MUNICIPAL LANDFILL

TITLE SHEET

DRAINGE PLAN COLLECTION SYSTEM SITE PLAN OF MOUND A

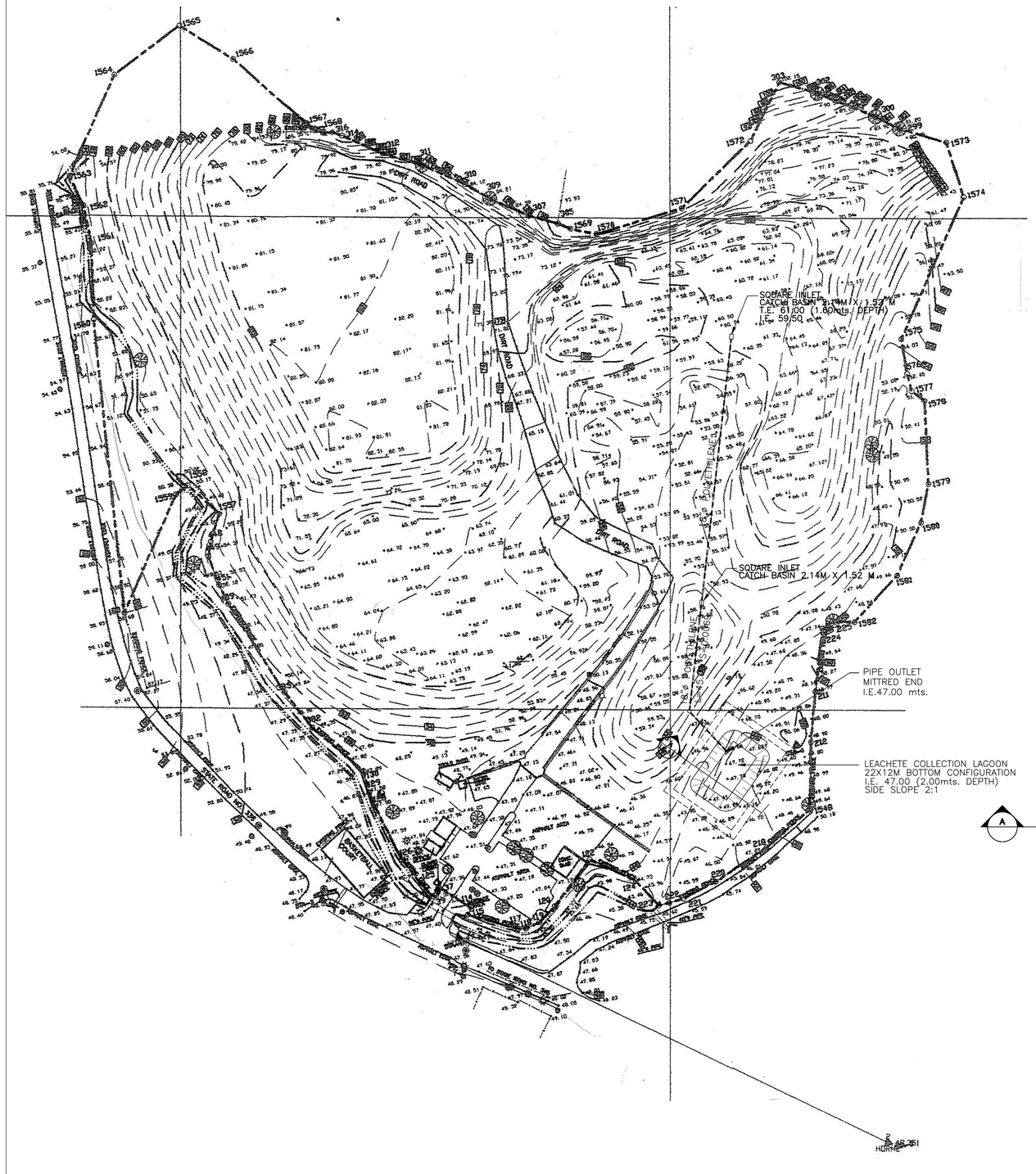
REVISION	DESCRIPTION	DATE:	DRAWN:	CHECKED:	CHECKED:	CHECKED:	SELLO

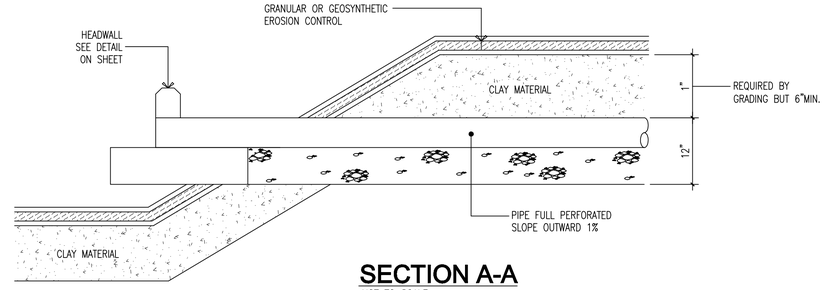
SONDEOS INC.

PERMISOS/ESTUDIOS SUBSUELO/ESTUDIOS AMBIENTALES/ MUESTRAS

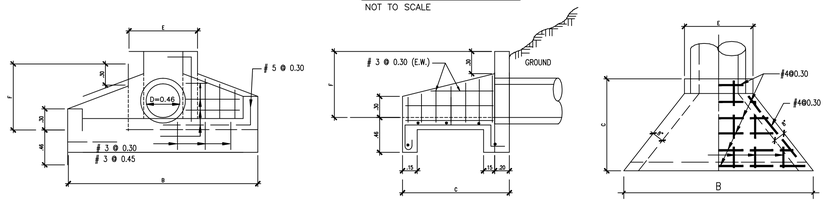
CALLE BENIGNO REYES #321
SAN JUAN, PUERTO RICO 00907
TEL. (787) 780-5594 / (787) 771-7138787
CEL. (787) 633-7818

DRAWN: G.A.R.	JOB N°: *
CHECKED: ING. OTTO CALDES	DRAWING N°: SI-1.9
SCALE: 1:100	SHEET N°: 3 OF: 3
DATE: MAY - 25 - 2009	



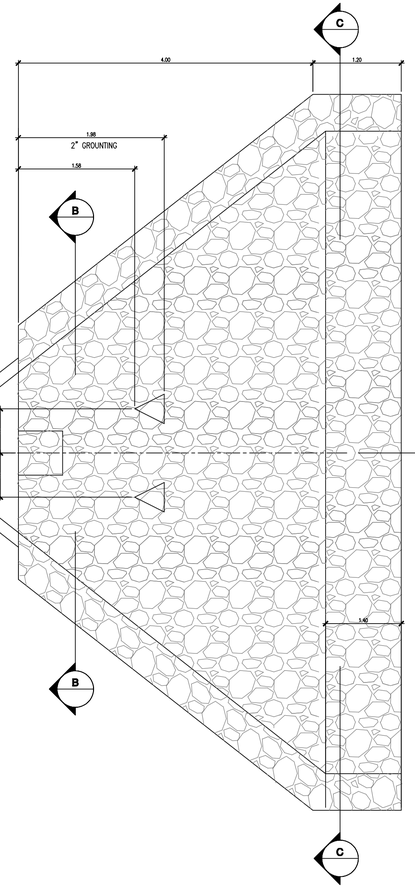


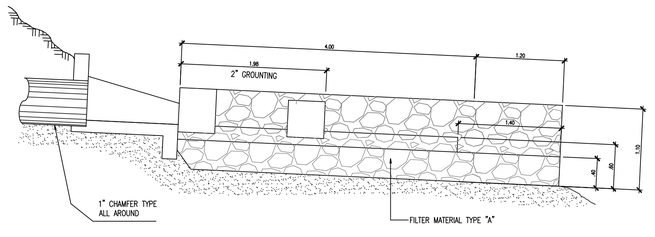
SECTION A-A
NOT TO SCALE



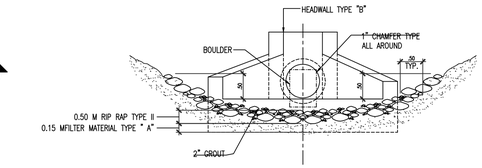
ELEVATION | SECTION | PLAN

HEADWALL DETAILS
SCALE = 1:30

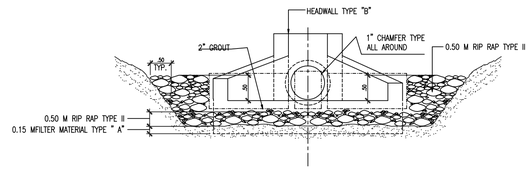




SECTION A-A



SECTION B-B



SECTION C-C

ADVANCE COPY
ING. OTTO CALDES LIC. PE4000

MUNICIPALITY OF HORMIGUEROS PUERTO RICO
CLOSURE PLAN FOR THE MUNICIPAL LANDFILL

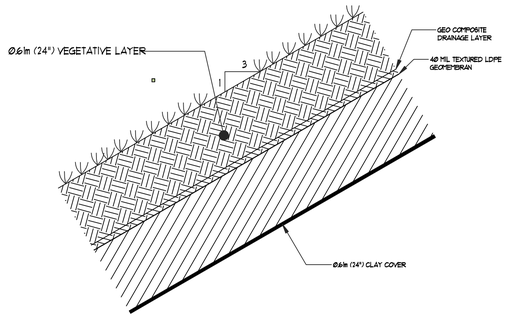
TITLE SHEET

LEACHETE COLLECTION SYSTEM LAGOON PLAN & DETAILS

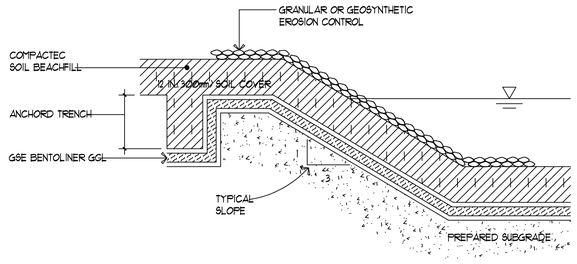
REVISION	DESCRIPTION	DATE:	DRAWN:	CHECKED:	CHECKED:	CHECKED:	SELLO

SONDEOS INC.
PERMISOS/ESTUDIOS SUBSUELO/ESTUDIOS AMBIENTALES/ MUESTRAS
CALLE BENIGNO REYES #321
SAN JUAN, PUERTO RICO 00907
TEL. (787) 760-5594 / (787) 771-7138787
CEL. (787) 633-7818

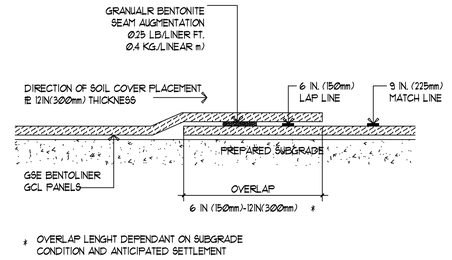
DRAWN: G.A.R.	JOB N°: .
CHECKED: ING. OTTO CALDES	DRAWING N°: LC-1.1
SCALE: 1:100	
DATE: AGO - 25 - 2009	SHEET N°: 6 OF: 6



CONCRETE LINED DITCH (1)
N.T.S.

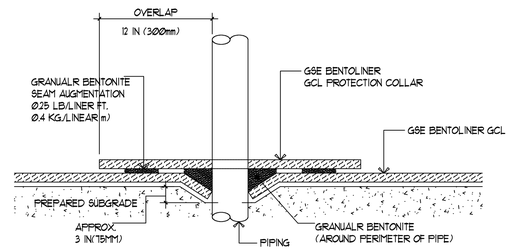


SURFACE IMPOUNDMENT SLOPE DETAIL
NOT TO SCALE

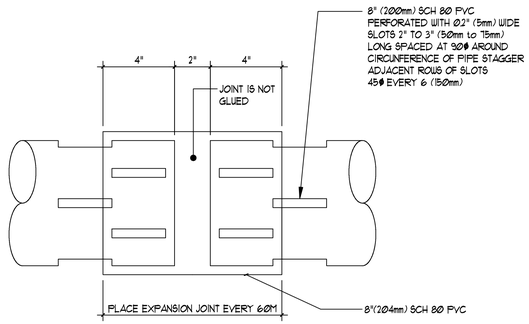


\# OVERLAP LENGHT DEPENDANT ON SUBGRADE CONDITION AND ANTICIPATED SETTLEMENT

BENTONITE ENHANCED SEAM DETAIL
NOT TO SCALE



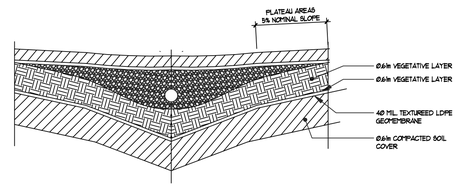
VERTICAL PIPE PENETRATION DETAIL
NOT TO SCALE



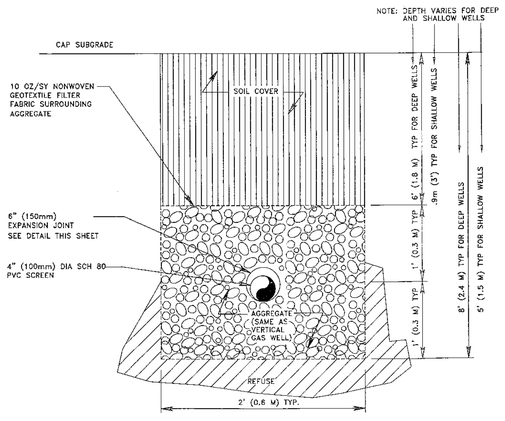
NOTE:
1- 100mm CORRUGATED HDPE PIPE MAY BE SUBSTITUTED FOR THE HORIZONTAL PVC VENT PIPE.

2- GLUE 100mm PIPE JOINTS

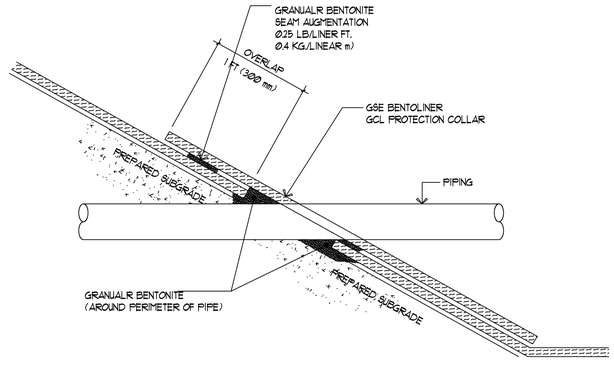
DRAINAGE JOINT DETAIL (3)
SCALE: XX = 1'-0"



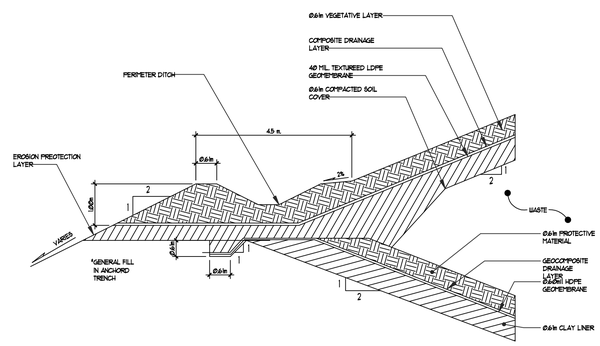
LEACHATE COLLECTION SYSTEM DETAIL (2)
N.T.S.



DRAINAGE TRNCH DETAIL (4)
SCALE: XX = 1'-0"



VERTICAL PIPE PENTRATION DTAIL
NOT TO SCALE



ANCHORD DETAIL FOR INDUSTRIAL CELL COVER (X-XX)
N.T.S.

ADVANCE COPY
ING. OTTO CALDES LIC. PE4000

MUNICIPALITY OF HORMIGUEROS PUERTO RICO
CLOSURE PLAN FOR THE MUNICIPAL LANDFILL

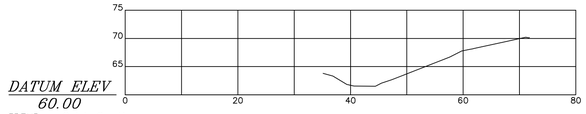
TITLE SHEET

GENERAL DETAIL OF SECTION B

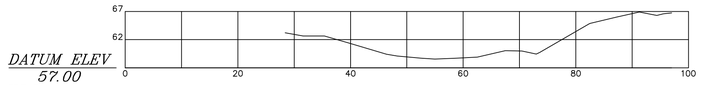
REVISION	DESCRIPTION	DATE:	DRAWN:	CHECKED:	CHECKED:	CHECKED:	SELLO

SONDEOS INC.
PERMISOS/ESTUDIOS SUBSUELO/ESTUDIOS AMBIENTALES/ MUESTRAS
CALLE BENIGNO REYES #321
SAN JUAN, PUERTO RICO 00907
TEL. (787) 780-5594 / (787) 771-7138787
CEL. (787) 633-7818

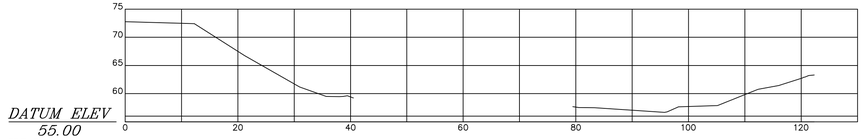
DRAWN: G.A.R.	JOB Nº: .
CHECKED: ING. OTTO CALDES	DRAWING Nº: SI-1.2
SCALE: AS SHOWN	SHEET Nº: 5 OF: 6
DATE: JUN - 25 - 2009	



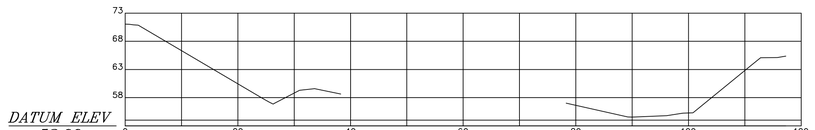
GROUP Quick Section
SECTION 1



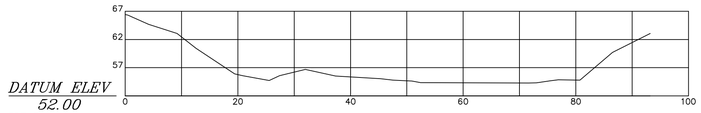
GROUP Quick Section
SECTION 2



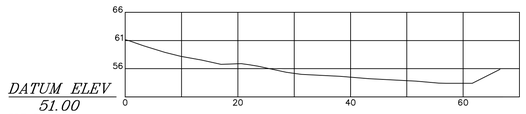
GROUP Quick Section
SECTION 3



GROUP Quick Section
SECTION 4

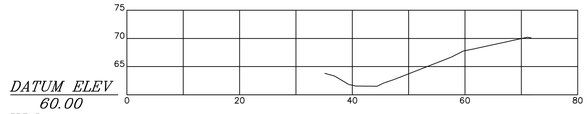


GROUP Quick Section
SECTION 5



GROUP Quick Section
SECTION 6

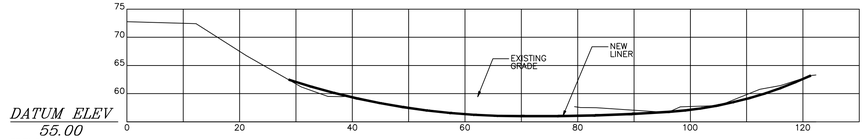
EXISTING CROOS SECTIONS



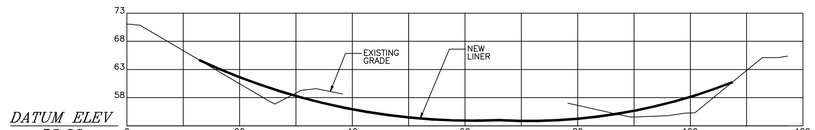
GROUP Quick Section
SECTION 1

CUT & FILL SCHEDULE		
SECTION MK'D	CUT	FILL
SECTION 2	5,212.50 CU. MTS.	
SECTION 3	2,160.75 CU. MTS.	156.75 CU. MTS.
SECTION 4	3,794.75 CU. MTS.	1,339.25 CU. MTS.
SECTION 5	1,416.75 CU. MTS.	969.75 CU. MTS.

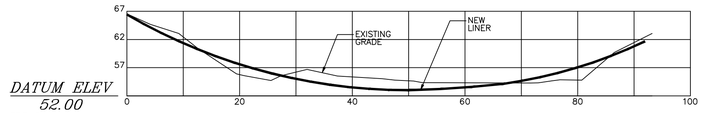
GROUP Quick Section
SECTION 2



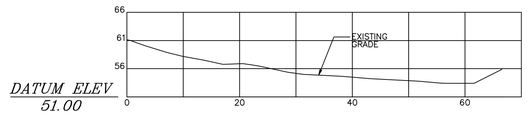
GROUP Quick Section
SECTION 3



GROUP Quick Section
SECTION 4



GROUP Quick Section
SECTION 5



GROUP Quick Section
SECTION 6

PROPOSED CROOS SECTIONS

ADVANCE COPY
ING. OTTO CALDES LIC. PE4000

MUNICIPALITY OF HORMIGUEROS PUERTO RICO
CLOSURE PLAN FOR THE MUNICIPAL LANDFILL

TITLE SHEET

EXISTING CROOS SECTIONS
AND PROPOSED
CROSS SECTION OF MOUND B

REVISION	DESCRIPTION	DATE:	DRAWN:	CHECKED:	CHECKED:	CHECKED:	SELLO

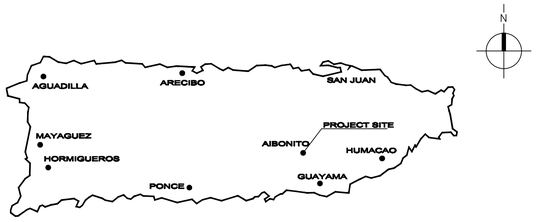
SONDEOS INC.
PERMISOS/ESTUDIOS SUBSUELO/ESTUDIOS AMBIENTALES/ MUESTRAS
CALLE BENIGNO REYES #321
SAN JUAN, PUERTO RICO 00907
TEL. (787) 780-5594 / (787) 771-7138787
CEL. (787) 633-7818

DRAWN: G.A.R.	JOB N°: .
CHECKED: ING. OTTO CALDES	DRAWING N°: SI-1.1
SCALE: 1:500	SHEET N°: 4 OF: 6
DATE: JUN - 25 - 2009	

LATERAL EXPANSION
THE MUNICIPAL LANDFILL

MUNICIPALITY OF HORMIGUEROS

HON. PEDRO GARCIA FIGUEROA

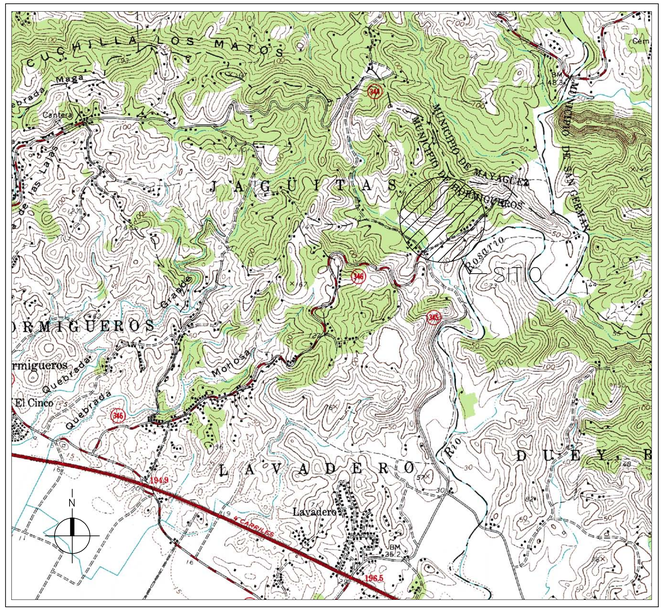


REGIONAL LOCATION MAP

N.T.S.

SCHEDULE OF DRAWING

SHEET NUMBER	SCHEDULE OF DRAWING
T-1.0	TITLE SHEET, INDEX AND LOCATION MAP
TS-1.0	EXISTING TOPOGRAPHY SITE PLAN SECTION B
TS-1.1	EXISTING SURVEYING SITE PLAN SECTION B
SI-1.1	EXISTING CONDITION CROSS SECTION & PROPOSED CROSS SECTIONS
SI-1.2	DETAILS
LC-1.1	LEACHETE COLECTION SYSTEM PLAN AND DETAILS



SITE LOCATION MAP

SCALE 1:20,000

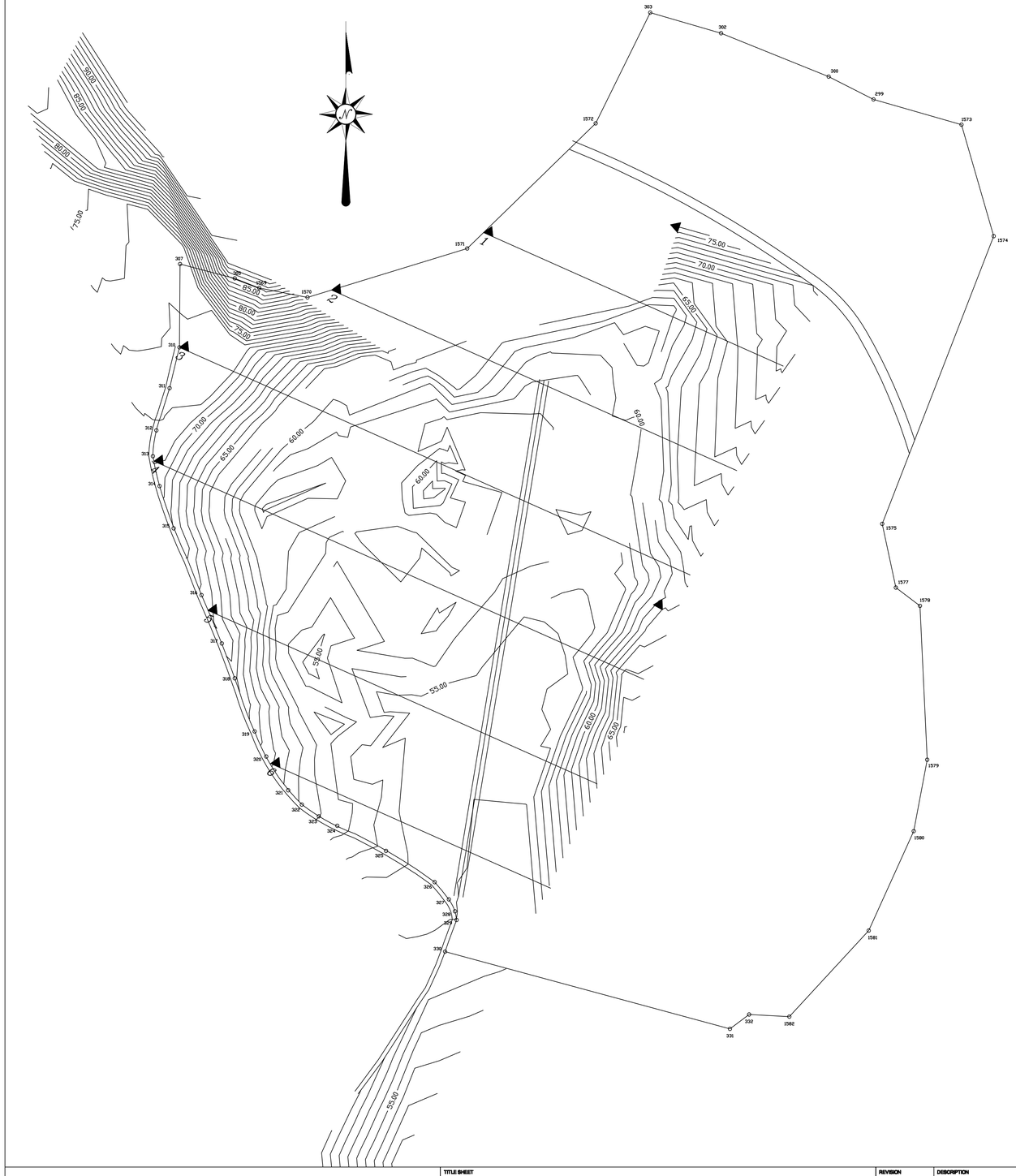
ADVANCE COPY

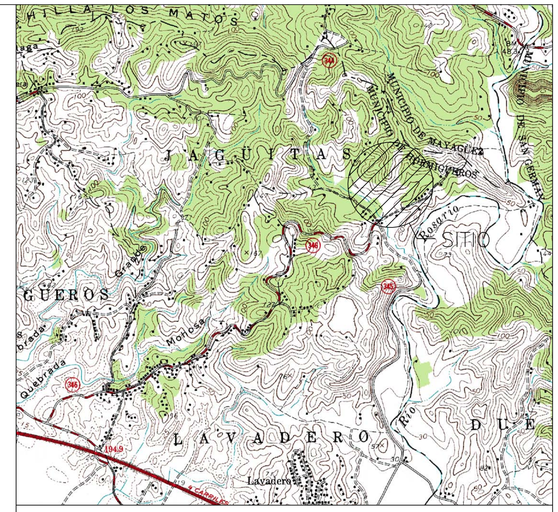
ING. OTTO CALDES LIC. PE4000

DRAWN: G.A.R.	JOB Nº: 01.09
CHECKED: ING. [illegible]DES	DRAWING Nº: T-1.0
SCALE: AS SHOWN	SHEET Nº: 1 OF: 6
DATE: JUNE - 25 - 2009	

SONDEOS INC.

PERMISOS/ESTUDIOS SUBSUELO/ESTUDIOS AMBIENTALES/ MUESTRAS





PLANO DE LOCALIZACION SCALE: 1:20,000

TOTAL PARCEL

SURVEY TABLE

POINT	BEARING	DISTANCE	X	Y	REMARKS
1582			129875.321	235236	
1581	N 42° 39' 29" E	25.6102	129892.675	235254.834	
1580	N 24° 20' 34" E	23.8504	129902.506	235276.564	
1579	N 10° 46' 39" E	15.9096	129905.481	235292.193	
1578	N 2° 42' 6" W	33.6904	129903.893	235325.846	
1577	N 52° 50' 1" W	6.6095	129898.626	235329.839	
1575	N 12° 9' 20" W	14.271	129895.621	235343.79	
1574	N 21° 10' 56" E	67.4856	129920.006	235406.716	
1573	N 16° 9' 22" W	25.3543	129912.951	235431.069	
299	N 73° 58' 33" W	20.0042	129893.724	235436.591	
300	N 63° 2' 39" W	11.0147	129883.906	235441.584	
302	N 68° 2' 21" W	25.3709	129860.376	235451.072	
303	N 73° 42' 47" W	16.1314	129844.892	235455.596	
1572	S 26° 14' 8" W	26.996	129832.958	235431.381	
1571	S 45° 45' 11" W	39.2202	129804.863	235404.015	
1570	S 72° 58' 44" W	36.5395	129769.924	235393.319	
1569	N 78° 57' 45" W	10.76	129759.363	235395.379	
305	N 68° 37' 41" W	5.7461	129754.012	235397.473	
307	N 75° 22' 27" W	12.3481	129742.064	235400.591	
310	S 0° 28' 53" W	18.2056	129741.911	235382.386	
311	S 13° 28' 13" W	9.1826	129739.772	235373.456	
312	S 17° 23' 14" W	9.6678	129736.883	235364.23	
313	S 7° 49' 43" W	5.6971	129736.107	235358.586	
314	S 12° 39' 20" E	6.7233	129737.58	235362.026	
315	S 18° 24' 59" E	9.7303	129740.654	235342.794	
316	S 22° 38' 10" E	15.8077	129746.738	235328.204	
317	S 22° 50' 47" E	11.4666	129751.19	235317.637	
318	S 20° 25' 19" E	8.1535	129754.035	235309.996	
319	S 20° 24' 1" E	12.4018	129758.358	235298.372	
320	S 24° 48' 53" E	6.0474	129760.896	235292.883	
321	S 33° 7' 38" E	8.7813	129765.695	235285.529	
322	S 43° 31' 49" E	4.3558	129768.695	235282.371	
323	S 55° 20' 57" E	4.499	129772.396	235279.813	
324	S 62° 56' 59" E	4.5407	129776.44	235277.748	
325	S 62° 48' 39" E	11.9887	129787.104	235272.27	
326	S 57° 18' 3" E	12.6521	129797.751	235265.435	
327	S 39° 8' 7" E	4.8926	129800.839	235261.64	
328	S 27° 43' 22" E	2.9213	129802.198	235259.054	
329	S 9° 42' 6" E	1.9286	129802.523	235257.153	
330	S 19° 54' 38" W	7.3557	129800.018	235250.237	
331	S 74° 50' 0" E	64.5535	129862.323	235233.348	
332	N 5° 6' 14" E	5.2318	129866.507	235286.489	
1582	S 86° 49' 28" E	8.8276	129875.321	235236	

AREA = 26738.8947 SQ. MTS = 6.8031 CUERDAS

ADVANCE COPY
ING. OTTO CALDES LIC. PE4000

MUNICIPALITY OF HORMIGUEROS PUERTO RICO
CLOSURE PLAN FOR THE MUNICIPAL LANDFILL

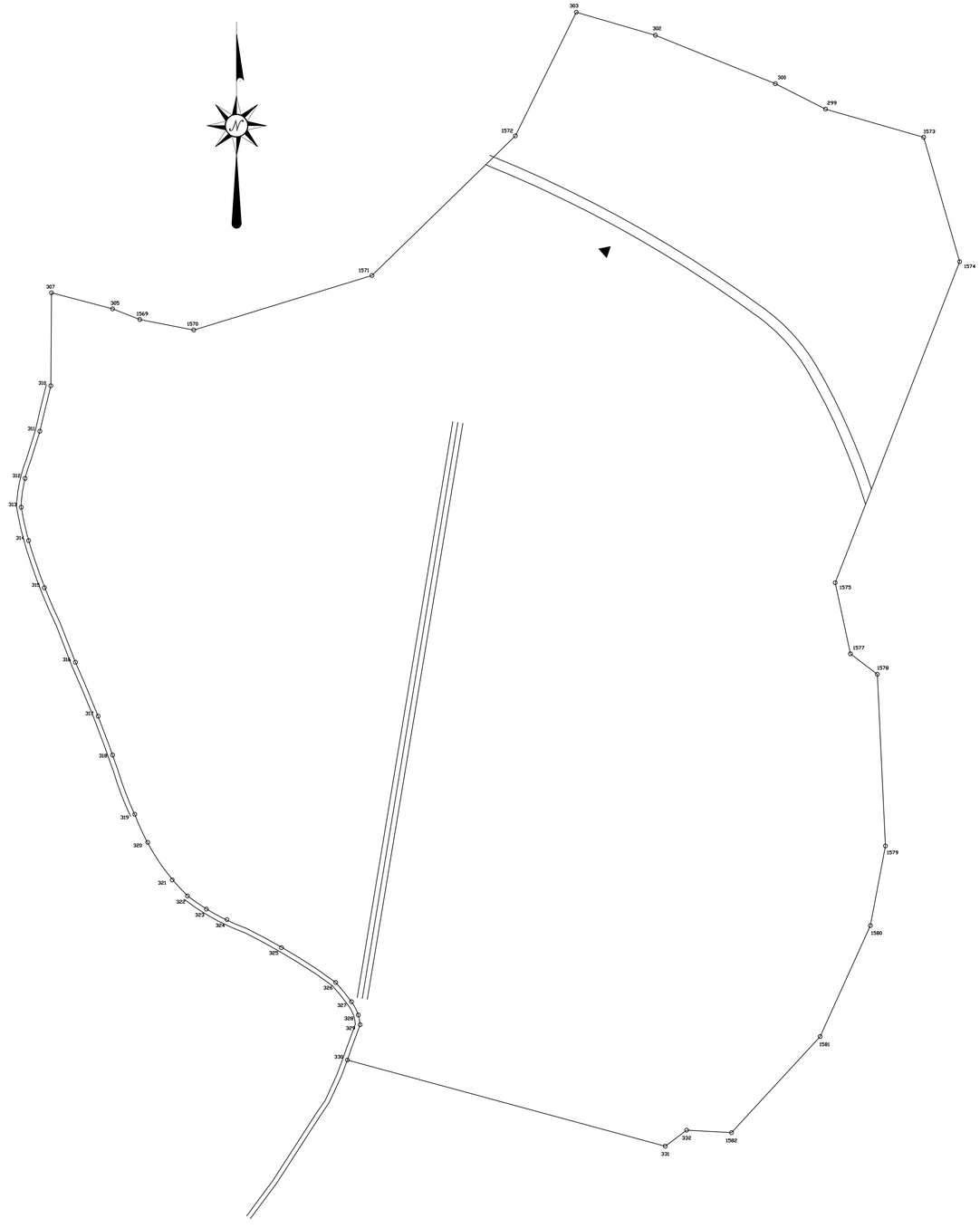
TITLE SHEET

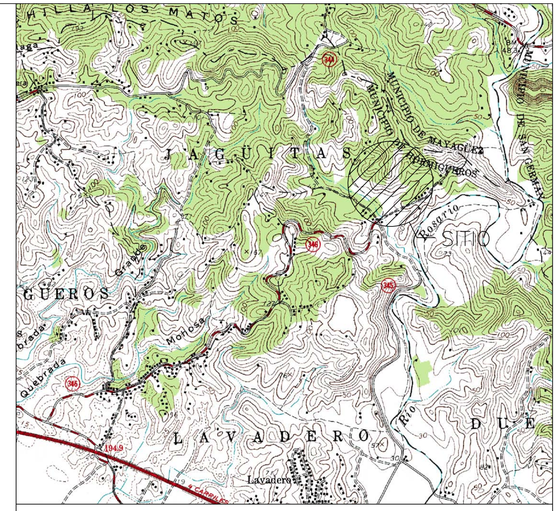
EXISTING TOPOGRAPHY SITE PLAN WITH ELEVATION AND SLOPE CROSS SECTION OF SECTION B

REVISION	DESCRIPTION	DATE:	DRAWN:	CHECKED:	CHECKED:	CHECKED:	SELLO

SONDEOS INC.
PERMISOS/ESTUDIOS SUBSUELO/ESTUDIOS AMBIENTALES/ MUESTRAS
CALLE BENIGNO REYES #321
SAN JUAN, PUERTO RICO 00907
TEL. (787) 780-5594 / (787) 771-7138787
CEL. (787) 633-7818

DRAWN: G.A.R.	JOB N°: 01.09
CHECKED: ING. OTTO CALDES	DRAWING N°: TS-1.0
SCALE: 1:500	SHEET N°: 2 OF: 6
DATE: JUN - 25 - 2009	





PLANO DE LOCALIZACION SCALE: 1:20,000

TOTAL PARCEL

SURVEY TABLE

POINT	BEARING	DISTANCE	X	Y	REMARKS
1582			129875.321	235236	
1581	N 42° 39' 29" E	25.6102	129892.675	235254.834	
1580	N 24° 20' 34" E	23.8504	129902.506	235276.564	
1579	N 10° 46' 39" E	15.9096	129905.481	235292.193	
1578	N 2° 42' 6" W	33.6904	129903.893	235325.846	
1577	N 52° 50' 1" W	6.6095	129898.626	235329.839	
1575	N 12° 9' 20" W	14.271	129895.621	235343.79	
1574	N 21° 10' 56" E	67.4856	129920.006	235406.716	
1573	N 16° 9' 22" W	25.3543	129912.951	235431.069	
299	N 73° 58' 33" W	20.0042	129893.724	235436.591	
300	N 63° 2' 39" W	11.0147	129883.906	235441.584	
302	N 68° 2' 21" W	25.3709	129860.376	235451.072	
303	N 73° 42' 47" W	16.1314	129844.892	235455.596	
1572	S 26° 14' 8" W	26.996	129832.958	235431.381	
1571	S 45° 45' 11" W	39.2202	129804.863	235404.015	
1570	S 72° 58' 44" W	36.5395	129769.924	235393.319	
1569	N 78° 57' 45" W	10.76	129759.363	235395.379	
305	N 68° 37' 41" W	5.7461	129754.012	235397.473	
307	N 75° 22' 27" W	12.3481	129742.064	235400.591	
310	S 0° 28' 53" W	18.2056	129741.911	235382.386	
311	S 13° 28' 13" W	9.1826	129739.772	235373.456	
312	S 17° 23' 14" W	9.6678	129736.883	235364.23	
313	S 7° 49' 43" W	5.6971	129736.107	235358.586	
314	S 12° 39' 20" E	6.7233	129737.58	235352.026	
315	S 18° 24' 59" E	9.7303	129740.654	235342.794	
316	S 22° 38' 10" E	15.8077	129746.738	235328.204	
317	S 22° 50' 47" E	11.4666	129751.19	235317.637	
318	S 20° 25' 19" E	8.1535	129754.035	235309.996	
319	S 20° 24' 1" E	12.4018	129758.358	235298.372	
320	S 24° 48' 53" E	6.0474	129760.896	235292.883	
321	S 33° 7' 38" E	8.7813	129765.695	235285.529	
322	S 43° 31' 49" E	4.3558	129768.695	235282.371	
323	S 55° 20' 57" E	4.499	129772.396	235279.813	
324	S 62° 56' 59" E	4.5407	129776.44	235277.748	
325	S 62° 48' 39" E	11.9887	129787.104	235272.27	
326	S 57° 18' 3" E	12.6521	129797.751	235265.435	
327	S 39° 8' 7" E	4.8926	129800.839	235261.64	
328	S 27° 43' 22" E	2.9213	129802.198	235259.054	
329	S 9° 42' 6" E	1.9286	129802.523	235257.153	
330	S 19° 54' 38" W	7.3557	129800.018	235250.237	
331	S 74° 50' 0" E	64.5535	129862.323	235233.348	
332	N 53° 6' 14" E	5.2318	129866.507	235236.489	
1582	S 86° 49' 28" E	8.8276	129875.321	235236	

AREA = 26738.8947 SQ. MTS = 6.8031 CUERDAS

ADVANCE COPY
ING. OTTO CALDES LIC. PE4000

MUNICIPALITY OF HORMIGUEROS PUERTO RICO
CLOSURE PLAN FOR THE MUNICIPAL LANDFILL

TITLE SHEET

EXISTING SURVEY PLAN OF SECTION B

REVISION	DESCRIPTION	DATE:	DRAWN:	CHECKED:	CHECKED:	CHECKED:	SELLO

SONDEOS INC.
PERMISOS/ESTUDIOS SUBSUELO/ESTUDIOS AMBIENTALES/ MUESTRAS
CALLE BENIGNO REYES #321
SAN JUAN, PUERTO RICO 00907
TEL. (787) 780-5594 / (787) 771-7138787
CEL. (787) 633-7818

DRAWN: G.A.R.	JOB N°: .
CHECKED: ING. OTTO CALDES	DRAWING N°: TS-1.1
SCALE: 1:500	SHEET N°: 3 OF: 6
DATE: JUN - 25 - 2009	